REMARKS

This is a full and timely response to the final Official Action mailed **December 12, 2008** (the "Office Action" or "Action"). Reconsideration of the application in light of the following remarks is respectfully requested.

Claim Status:

Claims 1-31 have been withdrawn from consideration by under the imposition of a previous Restriction Requirement. ***No amendments to the claims are proposed by the present paper.*** Thus, claims 32-36 are currently pending for further action.

Prior Art:

Rejections under 35 U.S.C. §103(a):

In the recent final Office Action, claims 32-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,014,121 to Hasegawa et al. (hereinafter "Hasegawa") in view of U.S. Patent Application Publication No. 2001/0002695 to Takata et al. (hereinafter "Takata").

Claim 32:

Independent claim 32 recites:

> A high speed 3D surface imaging camera comprising:
> a light projector for selectively illuminating an object to generate 3D image data;
> ***an image sensor configured to receive reflected light from said object and to generate three separate color image data sets based on said reflected light, said three separate color image data sets providing said 3D image data of said object***; and

means for generating sequential color projections from said projector onto said object to be photographed;

wherein said image sensor is configured to eliminate cross talk between said sequential color projections by allowing for a sequential exposure of said image sensor within a single frame cycle, said sequential exposure corresponding with said sequential color projections.

(Emphasis added).

In contrast, Hasegawa and Takata do not teach or suggest a high-speed 3D surface imaging camera comprising an image sensor configured to receive reflected light from an object and to generate three separate color image data sets based on the reflected light, the three separate color image data sets providing said 3D image data of the object.

The final Office Action concedes that "Hasegawa does not teach said three separate color image data sets (RGB) providing said 3D image data of said object." (Action, p. 5). In order to make up the deficiency of Hasegawa, the final Office Action cites to Takata, and states that Takata teaches that "a phase value calculation means (9) calculates a plurality of phase values from the RGB image signals," and that the phase value calculation means (9) calculates XYZ coordinates and the 3D shape of the objet (O) is uniformly measured (Para 61-65)." (Action, p. 5).

However, Hasegawa teaches "an image pickup system with an illuminating device capable of sequentially irradiating three kinds of color lights different from each other onto an object, an objective lens system forming images of the object with the color lights, a solid-state image sensor receiving the images of the object, a signal processing device producing individual color images of the object based on the solid-state image sensor, and a color dispersion device or a color separation device disposed in an optical path of light incident on the solid-state image sensor from the object." (Hasegawa, Abstract). Hasegawa further teaches that "image signals

corresponding to the respective colors… are integrated together…to thereby be displayed in color on a screen of a color TV monitor 23." (Id, col. 4, line 67 to col. 5, line 9). In other words, Hasegawa exclusively teaches a method of producing a 2D image.

In contrast, Takata ***exclusively*** discloses "a 3D shape measurement method and a device using the method eliminate harmful influences of periodic inconstancy in the phase shift method." (Takata, Abstract). Takata further teaches "obtaining a result of image pickup by projecting [a] determined plurality of optical intensity patterns onto an object while shifting the phases so as not to interfere with each other; and ***measuring the 3D shape of the object*** based on the result of image pickup." (Takata, para. [0030]). Therefore, while Hasegawa exclusively teaches a method of producing a ***2D image***, Takata exclusively teaches a method of measuring a ***3D image***. In this regard, Hasegawa and Takata teach away from each other.

It is improper to combine references where the references teach away from their combination. (*In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). This principle was cited with approval in the recent Supreme Court decision, *KSR*. The Supreme Court in *KSR* discussed in some detail *United States v. Adams*, 383 U.S. 39 (1966), stating in part that in that case, "[t]he Court relied upon the corollary principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." Accordingly, it remains improper to combine references where the references teach away from their combination.

Under the analysis required by *Graham v. John Deere*, 383 U.S. 1 (1966) to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the

ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Hasegawa and Takata, did not include the claimed subject matter, particularly a high-speed 3D surface imaging camera comprising an image sensor configured to receive reflected light from an object and to generate three separate color image data sets based on the reflected light, the three separate color image data sets providing said 3D image data of the object.

The differences between the cited prior art and the claimed subject matter are significant because the recitations of claim 32 provide for a system that eliminates crosstalk between multiple lighting patterns within the same field cycle, while maintaining a simplified multi-spectrum projection mechanism with high image collection rates. Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claim 32 under 35 U.S.C. § 103 and *Graham*.

Conclusion:

In view of the foregoing arguments, all claims are believed to be in condition for allowance over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed.

The absence of a reply to a specific rejection, issue or comment in the Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicants expressly do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

If the Examiner has any comments or suggestions which could place this application in better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

If any fees are owed in connection with this paper that have not been elsewhere authorized, authorization is hereby given to charge those fees to Deposit Account 18-0013 in the name of Rader, Fishman & Grauer PLLC.

Respectfully submitted,

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